IN THE CLAIMS

1. (Currently amended) Optical-fiber communication equipment, comprising:

a laser light source,

a means for changing light of the laser light source to a parallel plane wave to form a parallel light path,

an etalon having two or more transmission bands and having a free spectral range matched with a channel grid interval of wavelength division multiplexing optical-fiber communication, determined by ITU recommendation, and

first and second light ~~detectors~~ detecting means, wherein:

said etalon is located in the parallel light path;

a wavelength of the laser light source is enabled to be changed so that said wavelength is fixed to a desired value of the channel grid interval of wavelength division multiplexing optical-fiber communication;

the parallel plane wave is divided into at least two pieces of light including light that is transmitted through said etalon and light passing through a medium having optical characteristics different from those of the light that is transmitted through said etalon;

the first light detecting means detects one divided piece of light and the second light detecting means detects the other divided piece of light;

signals based on photocurrents from the first and second light ~~detectors~~ detecting means are compared to each other to obtain a signal for setting an emitting wavelength of the laser light source to a desired value; and

said signal is used for controlling a wavelength of the laser light source.

2. (Previously presented) Optical-fiber communication equipment according to claim 1, wherein:

said etalon is a Fabry Perot type etalon in which:

a refractive index of its medium is within a range of 1.0 to 4.0;

surface reflectivities of both reflection planes of the medium are within a range of 20 to 70%; and

a thickness of the medium is set so that a plurality of light transmission portions are generated at given wavelength intervals, and that any one of the plurality of light transmission portions is equivalent to an emitting wavelength desired by the laser light source.

3. (Previously presented) Optical-fiber communication equipment according to claim 1, wherein:

said etalon is a Fabry Perot type etalon constructed of two or more kinds of materials, which differ from each other in at least one of temperature characteristics and a refractive index.

4. (Previously presented) Optical-fiber communication equipment according to claim 1, wherein:

said etalon is a Fabry-Perot type etalon, a thickness of which depends on a channel grid interval of wavelength division multiplexing optical-fiber communication and is set to a value that is shifted from a free spectral range of the Fabry Perot type etalon, and thereby temperature characteristics of transmission characteristics of the Fabry Perot type etalon are compensated.

5. (Previously presented) Optical-fiber communication equipment according to Claim 1, wherein:

said laser light source is located at a position that is shifted from an optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path; or a normal line of an incident end face

for said etalon or a laser-light dividing means is located so that the normal line crosses the optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path.

6. (Currently amended) Optical-fiber communication equipment, comprising:

a laser light source,

a means for changing light of the laser light source to a parallel plane wave to form a parallel light path,

an optical system for dividing the parallel plane wave,

an etalon, and

first and second light ~~detectors~~ detecting means,

wherein:

said etalon is located in the parallel light path;

said etalon has a plurality of light transmission portions having desired wavelengths existing at given wavelength intervals;

any one of the plurality of light transmission portions corresponds to an emitting wavelength desired for the laser light source;

said optical system for dividing the parallel plane wave divides the parallel plane wave into at least two pieces of

light including light that is transmitted through said etalon and light passing through a medium having optical characteristics different from those of the light that is transmitted through said etalon;

the first light detecting means detects one divided piece of light and the second light detecting means detects the other divided piece of light;

signals from the first and second light ~~detectors~~ detecting means are compared to each other to obtain a signal for setting an emitting wavelength of the laser light source to a desired value; and

said signal is used for controlling a wavelength of the laser light source so that the wavelength is kept to be a given wavelength.

7. (Previously presented) Optical-fiber communication equipment according to claim 6, wherein:

said etalon is a Fabry Perot type etalon in which:

a refractive index of its medium is within a range of 1.0 to 4.0;

surface reflectivities of both reflection planes of the medium are within a range of 20 to 70%; and

a thickness of the medium is set so that a plurality of light transmission portions are generated at given wavelength intervals, and so that any one of the plurality of light transmission portions is equivalent to an emitting wavelength desired for the laser light source.

8. (Previously presented) Optical-fiber communication equipment according to Claim 6, wherein:

said etalon is a Fabry Perot type etalon constructed of two or more kinds of materials, which differ from each other in at least one of temperature characteristics and a refractive index.

9. (Previously presented) Optical-fiber communication equipment according to claim 6, wherein:

said etalon is a Fabry-Perot type etalon, a thickness of which depends on a channel grid interval of wavelength division multiplexing optical-fiber communication and is set to a value that is shifted from a free spectral range of the Fabry Perot type etalon, and thereby temperature characteristics of transmission characteristics of the Fabry Perot type etalon are compensated.

10. (Previously presented) Optical-fiber communication equipment according to Claim 6, wherein:

said optical-fiber communication equipment comprises an information storing portion, and said laser light source comprises a temperature detecting means;

the information storing portion stores temperature characteristics of a light transmission portion of the etalon; and

according to a signal from the temperature detecting means and said stored temperature characteristics of the light transmission portion of the etalon, a shift of an emitting wavelength of the laser light source from a channel-grid wavelength of said wavelength division multiplexing optical-fiber communication is compensated.

11. (Previously presented) Optical-fiber communication equipment according to claim 6, wherein:

said laser light source is located at a position that is shifted from an optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path; or a normal line of an incident end face for said etalon or the optical system for dividing the parallel plane wave is located so that the normal line crosses

the optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path.

12. (Currently amended) Optical-fiber communication equipment, comprising:

a laser light source,

a means for changing light of the laser light source to a parallel plane wave to form a parallel light path,

an optical system for dividing the parallel plane wave,

an etalon, and

first and second light ~~detectors~~ detecting means,

wherein:

said etalon is located in the parallel light path;

said laser light source is capable of lasing at a plurality of lasing wavelengths;

said etalon has a plurality of light transmission portions having desired wavelengths existing at given wavelength intervals;

the wavelength interval of the light transmission portions is equivalent to a channel grid interval of wavelength division multiplexing optical-fiber communication;

any one of said plurality of lasing wavelengths of the laser light source is equivalent to an emitting wavelength corresponding to a desired wavelength that is shifted to a wavelength portion having a highest transmittance among said plurality of light transmission portions provided by the etalon;

said optical system for dividing the parallel plane wave divides the parallel plane wave into at least two pieces of light including light that is transmitted through said etalon and light passing through a medium having optical characteristics different from those of the light that is transmitted through said etalon;

signals based on photocurrents from the first and the second light ~~detector~~ detecting means, which receive each of said divided pieces of light, are compared to each other to obtain a signal for setting an emitting wavelength of the laser light source to a desired value; and

said signal is used for controlling each of said plurality of lasing wavelengths provided by the laser light source so that each lasing wavelength is kept to be a given wavelength.

13. (Previously presented) Optical-fiber communication equipment according to claim 12, wherein:

said etalon is a Fabry Perot type etalon in which:

a refractive index of its medium is within a range of 1.0 to 4.0;

surface reflectivities of both reflection planes of the medium are within a range of 20 to 70%; and

a thickness of the medium is set so that a plurality of light transmission portions are generated at given wavelength intervals, and so that any one of the plurality of light transmission portions is equivalent to an emitting wavelength desired for the laser light source.

14. (Previously presented) Optical-fiber communication equipment according to Claim 12, wherein:

said etalon is a Fabry Perot type etalon constructed of two or more kinds of materials, which differ from each other in at least one of temperature characteristics and a refractive index.

15. (Previously presented) Optical-fiber communication equipment according to Claim 12, wherein:

said etalon is a Fabry-Perot type etalon, a thickness of which depends on a channel grid interval of wavelength division multiplexing optical-fiber communication and is set to a value that is shifted from a free spectral range of the Fabry Perot type etalon, and thereby temperature characteristics of transmission characteristics of the Fabry Perot type etalon are compensated.

16. (Previously presented) Optical-fiber communication equipment according to Claim 12, wherein:

said optical-fiber communication equipment comprises an information storing portion, and said laser light source comprises a temperature detecting means;

the information storing portion stores temperature characteristics of a light transmission portion of the etalon; and

according to a signal from the temperature detecting means and said stored temperature characteristics of light transmission portion of the etalon, a shift of an emitting wavelength of the laser light source from a channel-grid wavelength of said wavelength division multiplexing optical-fiber communication is compensated.

17. (Previously presented) Optical-fiber communication equipment according to Claim 12, wherein:

said laser light source is located at a position that is shifted from an optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path; or a normal line of an incident end face for said etalon or the optical system for dividing the parallel plane wave is located so that the normal line crosses the optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path.

18. (Currently amended) Optical-fiber communication equipment, comprising:

a laser light source,

a means for changing light of the laser light source to a parallel plane wave to form a parallel light path,

an etalon having two or more transmission bands, and

first and second light ~~detectors~~ detecting means,

wherein:

said etalon is located in the parallel light path;

the parallel plane wave is divided into at least two pieces of light including light that is transmitted through

said etalon and light passing through a medium having optical characteristics different from those of the light that is transmitted through said etalon;

the first light detecting means detects one divided piece of light and the second light detecting means detects the other divided piece of light;

signals based on photocurrents from the first and second light ~~detectors~~ detecting means are compared to each other to obtain a signal representing the free spectral range of the etalon;

said signal representing the free spectral range of the etalon is compared to a wavelength standard of plural standard wavelengths; and

said signal representing the free spectral range is used for controlling a wavelength of the laser light source to match one of the plural standard wavelengths of the wavelength standard.

19. (Previously presented) Optical-fiber communication equipment according to Claim 18, wherein:

said optical-fiber communication equipment comprises an information storing portion, and said laser light source comprises a temperature detecting means;

the information storing portion stores temperature characteristics of a light transmission portion of the etalon; and

according to a signal from the temperature detecting means and said stored temperature characteristics of the light transmission portion of the etalon, a shift of an emitting wavelength of the laser light source from the wavelength matched to said one of the plural standard wavelengths is compensated.

20. (Previously presented) Optical-fiber communication equipment according to Claim 18, wherein:

said laser light source is located at a position that is shifted from an optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path; or a normal line of an incident end face for said etalon or a laser-light dividing means is located so that the normal line crosses the optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path.

21. (Currently amended) Optical-fiber communication equipment, comprising:

a laser light source,

a means for changing light of the laser light source to a parallel plane wave to form a parallel light path,

an optical system for dividing the parallel plane wave, an etalon, and

first and second light ~~detectors~~ detecting means, wherein:

said etalon is located in the parallel light path;

said etalon has a plurality of light transmission portions having desired wavelengths existing at given wavelength intervals;

any one of the plurality of light transmission portions corresponds to an emitting wavelength desired for the laser light source;

said optical system for dividing the parallel plane wave divides the parallel plane wave into at least two pieces of light including light that is transmitted through said etalon and light passing through a medium having optical characteristics different from those of the light that is transmitted through said etalon;

the first light detecting means detects one divided piece of light and the second light detecting means detects the other divided piece of light;

signals from the first and second light ~~detectors~~ detecting means are compared to each other to obtain a signal representing the free spectral range of the etalon;

said signal representing the free spectral range of the etalon is compared to a wavelength standard of plural standard wavelengths; and

said signal representing the free spectral range is used for controlling a wavelength of the laser light source to match one of the plural standard wavelengths of the wavelength standard so that the wavelength is kept to be the matched wavelength.

22. (Previously presented) Optical-fiber communication equipment according to Claim 21, wherein:

said optical-fiber communication equipment comprises an information storing portion, and said laser light source comprises a temperature detecting means;

the information storing portion stores temperature characteristics of a light transmission portion of the etalon; and

according to a signal from the temperature detecting means and said stored temperature characteristics of the light transmission portion of the etalon, a shift of an emitting

wavelength of the laser light source from the wavelength matched to said one of the plural standard wavelengths is compensated.

23. (Previously presented) Optical-fiber communication equipment according to Claim 21, wherein:

said laser light source is located at a position that is shifted from an optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path; or a normal line of an incident end face for said etalon or the optical system for dividing the parallel plane wave is located so that the normal line crosses the optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path.

24. (New) Optical-filter communication equipment according to Claim 1, wherein

a thickness of said etalon is in range of 0.1mm to 10mm.

25. (New) Optical-filter communication equipment according to Claim 1, wherein

a temperature of said laser light source is changed in accordance with a temperature of said etalon, and

a thickness of said etalon is increased so that the shifted quantity of said etalon caused by a temperature of said etalon becomes equal to a difference of a narrowed free spectral range and the grid interval.

26. (New) Optical-filter communication equipment according to Claim 25, wherein

said laser light source and said etalon are located on the same cooler.